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Mid-Summer, 1967

Dear Member:

Computers first entered industry as massive, fast, brute force arithmetic devices. They were brought in because managers believed that they might do familiar tasks more rapidly, more accurately, and more cheaply than people. This was the EDP phase of computerization. A dozen years ago the problem-solving phase began, with the accent on less routinized procedures such as inventory control or production. Today we are beginning to enter the most sophisticated "information systems" phase of computerization.

Although management's jobs have not been much affected by computers, management's role--and responsibilities--have been subtly changed. In this transition period, the time has come for a long, hard look at computers--not as machines, but as business machines.

This month's Main Selection

THE IMPACT OF COMPUTERS ON MANAGEMENT

Edited by Charles A. Myers

is a thorough exploration of the computer's use as a management tool and the effect--both present and future--of computers on management and the nature of managerial work at all levels.

Foremost among the institutions studying the problems of computerization is the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology. Last year a conference was held at Cambridge, Massachusetts, to which leading figures in the computer sciences and management were invited, representing the very best brains of the academic and business worlds. In all, 36 participants and discussants were present. A total of eight full-length papers were presented, and their texts and the lively and trenchant discussions they provoked have all been preserved in the pages of **THE IMPACT OF COMPUTERS ON MANAGEMENT**.

The following are some of the highlights of this newly published book:

*Thomas L. Whisler explores five important problems affecting computerization in business and industry. One conclusion, which may come as no surprise, is that when office procedures are computerized, there are more deadlines than before. These deadlines tend to become more critical, reducing job satisfaction and creating anxieties among employees.

(continued on back page)

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Main Selection:

How can the computer be used most successfully by management? How will it affect management?

The Impact of Computers on Management

Edited by Charles

**Director of the Industrial Relations
School of Management and
Department of Economics at**

The scope of this month's Main Selection is large—so large, in fact, that its achievement becomes all the more impressive. *It deals, in profound and stimulating terms, with no less than the relationship between man and machine and the role of both in industrial organization.*

Based on a conference convened last year at the Alfred P. Sloan School of Management at M.I.T., **THE IMPACT OF COMPUTERS ON MANAGEMENT** brings together the latest thinking and research on the subject by some of the most eminent figures in the computer sciences and management. Though their training, experience and opinions were widely divergent, their areas of concern were common: the centralization of organization structures, data-processing, and information technology; the importance of outside influence on organizational changes; the changing nature of managerial work; and the implications of computerization for the higher levels of management.

Among the topics discussed are:

- ☐ How computerization affected the organization structure of five life insurance firms
(George E. Delehanty)

- ☐ The relationships between computer programs, managerial tasks, and organization structures
(David Klahr and Harold J. Leavitt)
- ☐ The implications of newer computer developments, especially on-line, real-time, and time-sharing systems
(Donald G. Carroll)
- ☐ The effect of computers on the profit-center type of organization
(John Dearden)
- ☐ The "total-system" concept and what it means for management
(John A. Beckett)
- ☐ The impact of information technology on management leadership and values
(Charles R. DeCarlo)

The book includes, as an appendix, a valuable case study showing how a computerized program was actually implemented in a business organization.
(Edgar F. Huse)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Rich in the insights of its knowledgeable and articulate contributors, this month's Main Selection is a significant step toward realizing the vast potential of the computer for business and industry.



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required for your next free Bonus Book*

erial work in the future?

Computers Management

Charles A. Myers

Relations Section at the Alfred P. Sloan
Professor of Industrial Relations in the
M.I.T. and the Sloan School

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Charles A. Myers: Introduction

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Charles R. DeCarlo: Changes in Manage-
ment Environment and Their Effect Upon
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Jay W. Forrester: Comments on the Con-
ference Discussion

APPENDIX: The Impact of Computerized
Programs on Managers and Organizations:
A Case Study of an Integrated Manufac-
turing Company. Edgar F. Huse

Special Selection:

Artificial Intelligence Techniques

By E. P. Carne

We have come a long way from the early days when "thinking" machines were creatures of science fiction. Today, it is possible to construct machines which not only perform routine analytic and arithmetic tasks but even simulate the more complex aspects of human intelligence.

Here is a book which lucidly explains the techniques used to design and develop these machines. Written by an authority with extensive experience in working with computers and computer-controlled systems, **ARTIFICIAL INTELLIGENCE TECHNIQUES** concentrates on the real problems of probing the workings of the human system and applying them to learning machines. Beginning with a description of the central nervous system, Dr. Carne goes on to discuss and illustrate the major approaches to neuron modelling and the organization of a simple learning system.

The second part of the book is especially useful for workers in the field. With the aid of a series of easy-to-follow diagrams, it applies the learning techniques to pattern recognition, discusses heuristic programming, and presents methods for improving the reliability of logical systems.

ARTIFICIAL INTELLIGENCE TECHNIQUES is a valuable guide to a subject with virtually unlimited—and enormously fascinating—potentialities in computer technology.

Contents

INTRODUCTION. Intelligence and Learning. The Nervous System. The Sensory Organs. Organization. Memory. NEURON MODELS: Formal Neuron. Automation. Adaptive Linear Neuron. Perceptron. Membrane Models. Neuristor. Transistor Models. Multi-Aperture Magnetic Core Neuron. Binary Logical Element. Conditional Probability Computer. SIMPLE LEARNING SYSTEM: Learning Network. Goal Network. Reinforcement. Rote Learning. PATTERN RECOGNITION: Chrysler Optical Processing Scanner. Frog's Retina. RCA Phonetic Typewriter. Artificial Sensors. Statistical Decision Models. Pandemonium. Random Features. Threshold Devices. Prediction. Ideal Pattern Recognizer. PROGRAMMING: Assemblers and Compilers. Heuristic Techniques. Tic-Tac-Toe. Checkers, Chess and Other Topics. General Problem Solver.

RELIABLE NETWORKS: Von Neumann's Bundles. Self-Repair. CONCLUSION. INDEX.

Illustrated

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*George E. Delehanty's study of the effect of computerization in nine life-insurance companies is extremely illuminating. He finds that the industry as a whole has not responded to computerization because competitive pressures to gain the maximum savings in costs have not been present.

*David Klahr and Harold J. Leavitt relate three large and omnipresent business variables to one another--managerial tasks, organization structure, and computer programs--to conclude that elaborate real-time systems-type programs or nonhierarchical programs may eventually play a larger role.

*John Dearden takes the dissenting view that the computer will have no impact on the organization of top or divisional management and only limited impact on management levels below the divisional manager. However, he concedes that data processing costs will be reduced and more timely information will be available.

*John A. Beckett demonstrates that the "total-systems" concept has greater application to the operations activities of a business than to the non-operation activities, such as policy formation, the search for alternatives, and the installation of systems.

*Charles R. DeCarlo examines the role of "technique" (of which the electronic digital computer is perhaps the best example) in the formulation of management values. He predicts that organizations too highly centralized through the use of computers may not attract the best qualified people.

*Edgar F. Huse's appended case study of some of the human problems imposed by computers upon management is based on research conducted in an integrated manufacturing company. He finds that the success of any computerized programs which cut across departmental lines is dependent upon the reactions of the "users" at various levels and their willingness to accept them.

THE IMPACT OF COMPUTERS ON MANAGEMENT is an illuminating and faithful record of everything that was said at last year's all-important M.I.T. conference--an event with implications and lessons for everyone interested in the future role of the computer in business, in industry, in government, and in research.

Sincerely yours,

Martin Reynolds

Martin Reynolds
Executive Director

A Partial Inventory of Main Entries by Category

1. DICTION

Abbreviations	connotations	hopefully	prior to
-able, -ible	constant (ly)	human	qualification
account for	contact (verb)	icecap	quote, unquote
acknowledge,	contemporary	identical	range
admit	context	if and when	rationale
acquiesce	continual	if's and an's	reaction
affinity	controversial	illy	redolent with
allege	convince	impinge	rehabilitate
allergic	covering words	imply, infer	restive
alternate,	dangerous pairs	in terms of	roadability
alternative	definitely	ironic	senior citizens
ambiance	delineate	-ism	sex
ambivalent	diction	-itis	skill(s)
amplify	dilemma	key	spelling
and/or	disinterested	level	telescoping
appreciate	-edly, adverbs in	lost causes	that, which,
average	education	make sense	relative
back formation	false singulars	malaprops	that, who,
barbarisms	financial	meaningful	relative
bespeak	fiscal	modern (istic)	tick
bourgeois	forbidden words	momently, -arily	togetherness
careen	format	moonlighting	too
check (verb)	Frankenstein	needless words	undue, unduly
colleague	French words and	nympho,	up till
communicate	phrases	psycho, etc.	usage, use
compare	-ful	only	verbal
compatible	fund (-ing)	popularized	verbiage
compose,	gambit	technicalities	very
comprise	genteelism	practical	via
concept	helpmate	pragmatic(al)	when and if
connive	historic(al)	prestigious	-wise

II. IDIOM

Absolute words	due to	prefer . . . than	titles and proper
between, among	had rather	prepositions	names
cake, eating and	hard put [to it]	sake, for its own	transitive,
having	have	set phrases	intransitive
center around	like	so that	try and
different (ly)	negative,	such	un-, in-, non-; -less
than	proving a	than whom	unless and until

III. SYNTAX

adverbs,	each, every	number,	since, yet
vexatious	effective	trouble with	unsavory pasts
and	equally	ought (not) (to)	voice
antecedents	fused participle	reason . . .	what is
articulation	hardly . . . than	because	"understood"?
contrary	inversion	sentence, the	which
danglers,	negatives,	sequence of tenses	/ and which
acceptable	trouble with	shall (should),	with, missing
due to	none	will (would)	without

IV. STYLE

ambiguity	-ion, -ness, -ment	noun-plague	scientism
emphasis	jargon	pedantry	spelling
etymology	journalese	prose,	understatement
initialese	linking	the sound of	

MODERN AMERICAN USAGE, Alternate Selection, may be ordered in addition to or instead of the Main Selection.

edly, adverb
forbidden w
fund (-ing) po
verbiage abs
different (ly) t
ler modern i
american ef
modern usage
double-duty
ion.-ness.-m

What the critics say about MODERN AMERICAN USAGE

"Wilson Follett was a tart and vigorous defender of the English language. He loved words and he had a Roman's reverence for clarity and order in a sentence. I rank him with H. W. Fowler as one of the two liveliest champions of good English usage in our time."
—EDWARD WEEKS, *Atlantic Monthly*

"Follett's book may be read with pleasure and profit by turning to almost any page. His wit, his clear mind, and his devotion to the writer's craft shine out from every page."
—*Scholastic Teacher*

"This book is, like Fowler's classic, a reference book that is also a pleasure to read."
—MAURICE DOLBIER, *New York World Journal Tribune*

"This is a book that any conscientious writer will continue to consult as long as he lives. . . . There will always be something to learn from these pages. I've had a wonderful time with MODERN AMERICAN USAGE."
—MARK VAN DOREN

"These pages retain Follett's flair and trenchancy . . . I agree most heartily with the principle that underlies all this sharp and lively commentary: to think about words is important . . . What makes Follett tick is a constant balanced urge to make words speak their pieces or step aside."
—*The New York Times Book Review*

"The MAU tries to do for the American language what H. W. Fowler's *Dictionary of Modern English Usage* has done for the British language. This is a high aim, indeed, and to a considerable extent the MAU has succeeded."
—*Newsweek*

"Like Fowler, Follett caustically cuts through bombast and nicellyisms . . . In my library his book takes its place alongside Fowler."
—JOHN BARKHAM, *Saturday Review Syndicate*

"Sensible, vigorous, and cogent . . . Follett deserves a place on the shelf beside Fowler."
—MALCOLM COWLEY, *Book Week*

"It is time we had an American book of usage grounded in the philosophy that the best in language — which is often the simplest — is not too good to be aspired to . . . MODERN AMERICAN USAGE will tacitly define [good usage] as what the judicious say and write as a result of conscious discriminations."

Wilson Follett wrote these words as he began work on his invaluable guide to educated usage and good taste — to "the best in language." Committed to the principle that "good writing is easier to read," Follett has given us, in MODERN AMERICAN USAGE, the means to make our words count, to make our language clearer, simpler, more logical, and less likely to produce confusion and error. And, by example, he has written a reference book, filled with wit and erudition, that embodies his own definition of good writing: "a pleasant combination of sound and sense."

The form of MODERN AMERICAN USAGE is simple: an alphabetized lexicon with commentary, from "a, an, the" to "zoology. See PRONUNCIATION 1." You can consult MAU on broad matters of grammar; on fine distinctions in the meanings of words; on idioms, fads and jargon; on the conventions of punctuation. The entire substance of the book is accessible even to the reader who hardly knows a conjunction from a preposition. Follett's means of making us think about the language we use are: example, analogy, simple reasoning, occasional diagrams, and a rare last resort to "Do this, not that." Precise, urban, and learned, MODERN AMERICAN USAGE is nevertheless easy to read and entirely comprehensible. Most important, perhaps, this guide convinces you of the reason as well as the rule and, in so doing, gives you confidence to use better English for your own advantage and pleasure.

The *Introductory* defines Follett's underlying assumptions about usage in three brief sections (delightful proof of the rewards of good usage): "On Usage, Purism, and Pedantry;" "On the Need of an Orderly Mind;" and "On the Need of Some Grammar."

Here the author is most explicit about his disagreements with the "linguists who deny that there is such a thing as correctness. The language, they say, is what anybody and everybody speaks." Follett's purpose is *not* to halt all changes in language, but to remind us of our errors and ambiguities, and to renew our interest in the realm of linguistic judgment and accuracy. Of his book, he says that "the most useful service it can render is to make its readers think for themselves on these matters."

Follett's relish for the American language is contagious, his style elegant and lucid even when he caustically battles the "New" linguists. His wit bites, but corrects; if you disagree with him on the usage of *shall* and *will*, you nevertheless find out a good deal about the American tongue and gratefully discover something about your own capacity and skill in using it.

More than an occasional aid, **MODERN AMERICAN USAGE** is almost a prerequisite to good writing, from the most informal to the most technical. Wilson Follett believes that words have meanings and that it is worth the effort to learn to say what we mean — not something in the general vicinity. For those who do any professional writing, **MODERN AMERICAN USAGE** will take its place, close at hand, next to the dictionaries and reference works and such classics as Bartlett, Roget, and Fowler. We believe it will become the standard book on American usage and the most widely used desk guide in the country during the next decade.

Wilson Follett died in 1963 with more than two-thirds of his manuscript in first draft. Jacques Barzun, who had followed the manuscript's progress from the beginning, accepted the task of finishing the work. When Professor Barzun's work was done, the whole was submitted to a distinguished group of writers and teachers — Carlos Baker, Frederick W. Dupee, Dudley Fitts, James D. Hart, Phyllis McGinley, and Lionel Trilling. Each of them greeted the book with enthusiasm and gave **MODERN AMERICAN USAGE** the benefit of his literary skill and educated judgment. Though lacking Wilson Follett's final hand, the book remains his in conception, in most of its execution, and in spirit.

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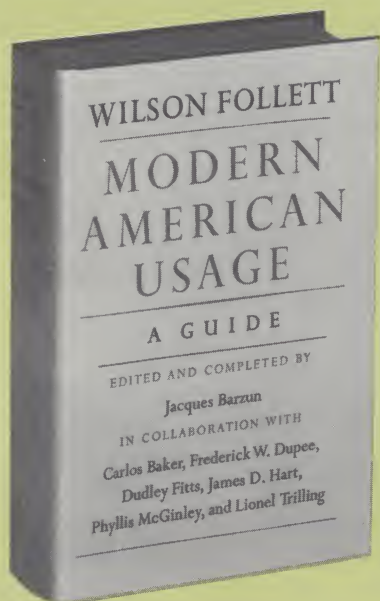
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for the outstanding book published in 1966

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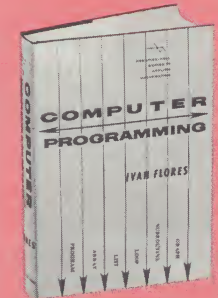
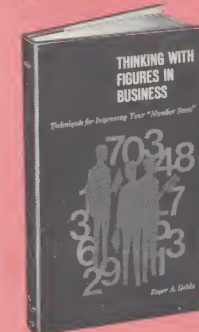
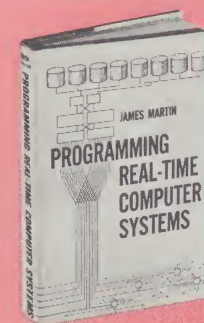
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